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Hard Freezes and Emerged Corn

By Roger Elmore, Department of Agronomy

Nearly half of the corn is emerged across Iowa as of May 9 with up to 60 percent emerged in the north central cropping district according to [USDA-NASS](#). As mentioned in a May 6 Integrated Crop Management News [article](#), 2010 has been one of the best planting seasons in history. Unfortunately, recent cold temperatures and a hard freeze across central and northern areas of Iowa resulted in some foliar damage to emerged corn seedlings.

On the positive side, most of Iowa's emerged corn has less than two fully developed leaves. Corn growing points remain below ground until the sixth leaf stage. So unless the ground freezes, little if any yield loss will occur if plants survive – and they most likely will survive. This all assumes normal conditions following a frost.

On the negative side however, with cool wet weather forecast for the remainder of this week, some plants may not live. Below normal temperatures will slow plant growth. Cool wet conditions and associated sluggish plant growth predisposes tender seedlings, already weakened by freezing temperatures, to infection by various destructive pathogens. Many plants may not survive.

With this in mind, [assess stands](#) once plants have a chance to recover from the frost damage, normally three to five days after a frost event. Dig plants and split stems to make an assessment. Healthy plant stems will have cream- to yellow-colored tissue above the growing point. Brown discoloration in the tissue above the growing point signifies pathogen invasion and impending plant death. Consider all factors carefully before replanting.



Recently emerged corn in north central Iowa and other parts of the state received frost early May 9. The early morning photo (top) shows the frosted plant; the bottom photo shows the change in plant appearance by late afternoon. Photos by John Holmes, ISU Extension field agronomist.

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